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January 7, 2004



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**Via Electronic Mail and Certified Mail  
Return Receipt Requested**

Mr. Kevin Adler, Remedial Project Coordinator  
U.S. Environmental Protection Agency, Region 5  
Office of Superfund, Remedial & Enforcement Response Branch  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

**Subject: Granville Solvents Site Removal Action Quarterly Report – Fourth Quarter 2003**

Dear Mr. Adler:

On behalf of the Granville Solvents Site PRP Group, Metcalf & Eddy of Ohio, Inc. respectfully submits the Quarterly Report for the Removal Action at the Granville Solvents Site. Copies have been sent to the following individuals:

Mr. Steve Acree, U.S. EPA (2 copies)  
Mr. Peter Felitti, U.S. EPA (cover letter)  
Mr. Fred Myers, Ohio EPA (1 copy)  
Mr. Joe Hickman, Manager, Village of Granville (1 copy)

If you have questions regarding this submittal, please contact me at (614) 890-5501.

Respectfully,

**METCALF & EDDY OF OHIO, INC.**

Gerald R. Myers  
Program Director

cc: B. Pfefferle, Chairman - GSS PRP Group  
William S. Brewer, PhD, Chairman – GSS PRP Group Technical Committee

**GRANVILLE SOLVENTS SITE  
REMOVAL ACTION QUARTERLY REPORT  
FOR OCTOBER, NOVEMBER and DECEMBER 2003**

**JANUARY 2004**

Pursuant to the requirement set forth in the Administrative Order by Consent (AOC, November 7, 1994) between the U.S. EPA and the Granville Solvents Site (GSS) Potentially Responsible Parties (PRP) Group, in Section 2.5-Reporting, and the letter, dated February 14, 1996, from Ms. Diane Spencer (U.S. EPA), this report constitutes the quarterly written progress report concerning actions undertaken pursuant to the AOC. This report covers the period of October 1, 2003, through December 31, 2003.

**I. PROGRESS MADE DURING REPORTING PERIOD**

Source Area Groundwater Control

The groundwater pumping and treatment system operated 741 hours in October, 720 hours in November, and 736 hours in December, for a total of 2,197 hours (99.5% of the total time available) during the fourth quarter of 2003. Since operation of the treatment system began in December 1994, the system has operated 98.8% of the available time.

The treatment system processed approximately 10.2 million gallons of water in October, 11.8 million gallons of water in November, and 11.5 million gallons of water in December, for a total of 33.5 million gallons of water for the quarter. Since operation began in December 1994, more than one billion gallons of groundwater (1,075,591,983 gallons) have been extracted and treated.

During the fourth quarter of 2003, M&E collected monthly air pressure measurements in the air-stripping unit's exhaust duct, which was used to calculate airflow values. The measured airflow was 1854 cubic feet per minute (cfm) in October, 1853 cfm in November and 2100 cfm in December. Acid washing of the air-stripping unit occurred in December.

M&E continued to perform the scheduled monthly maintenance on the treatment system. This maintenance ensures the system is performing at maximum efficiency and decreases unscheduled downtime. The maintenance included replacing the bag filters, lubricating the transfer pump and blower motors, and checking the flow meters and level sensors.

Water samples were collected from the system's influent and effluent sampling ports on October 21, November 6, and December 2. The analytical results are presented in Table 1. The September influent/effluent data were not available at the time of the last quarterly report and are, therefore, also included in the table.

Extraction well GSS-EW1 was operated at an average flow rate of approximately 70 gallons per minute (gpm) during the first 27 days of October. Well GSS-EW2 was operated at an average

flow rate of approximately 151 gpm during the first 27 days of October. The total pumping rate averaged 221 gpm for the first 27 days of October. Beginning with October 27, the groundwater system switched to pumping EW-2 exclusively at an average rate of 270 gpm. This rate was maintained for the remaining months of November and December in this fourth quarter of 2003.

**TABLE 1**  
**Monthly Influent/Effluent Sampling Results**

VOCs	Influent September 25	Effluent September 25	Influent October 21	Effluent October 21	Influent November 6	Effluent November 6	Influent December 2	Effluent December 2
1,1,1-Trichloroethane	15.0 µg/l	ND	12.0 µg/l	ND	15.0 µg/l	ND	14.0 µg/l	ND
cis-1,2-Dichloroethene	2.7µg/l	ND	2.6µg/l	ND	2.1 µg/l	ND	2.3 µg/l	ND
Tetrachloroethene	12.0 µg/l	ND	9.0 µg/l	ND	13.0 µg/l	ND	14.0 µg/l	ND
Trichloroethene	21.0 µg/l	0.31 µg/l	18.0 µg/l	0.44 µg/l	20.0 µg/l	0.43µg/l	20.0 µg/l	0.35µg/l
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND

ND – not detected

Approximately 33.5 million gallons of water were processed for the fourth quarter of 2003. Based on these data, total VOCs of approximately 0.12 lb/day in October, 0.16 lb/day in November and 0.24 lb/day in December, were discharged to the atmosphere during this reporting period.

Concentrations of TCE were detected in the effluent from the groundwater treatment system. The concentrations are well below the discharge limits of 5 ug/l established by Ohio EPA. In response to the detections of TCE in the effluent, M&E conducted routine acid washing of the treatment system in December.

#### Groundwater Monitoring

Starting October 27, pumping well GSS-EW1 was shut down and GSS-EW2 was run exclusively at an increased rate of 270 gpm. Groundwater level measurements were collected on several occasions thereafter to ensure that this pumping scheme was effective in creating a groundwater divide between the Granville Solvents Site and the Village of Granville wellfield. These data were used to develop a map (Figure 1) showing the general potentiometric surface and the location of the divide. A complete discussion of the new pumping scheme and the potentiometric surface will be provided in a forthcoming letter to the U.S. EPA before the end of January 2004.

Groundwater sampling for the semiannual event was completed on November 11-12. The pump in well GSS-MW11 malfunctioned at that time, therefore, GSS-MW11 was sampled on December 2.

### Source Area Soils

Source area soils are undergoing treatment at this time utilizing air injection (AI), air sparging (AS) and soil vapor extraction (SVE). The treatment systems have been in operation since December 2000. The soil vapor extraction system previously operated with a biweekly schedule in which one half of the SVE wells were operated during one period and one half operated during the alternate period. The vacuum extraction system under the cap was operated during all periods. The biweekly alternation was changed on May 2, 2003 such that all vacuum extraction wells were operated simultaneously. The average flow rate for the SVE system this quarter was approximately 398 standard cubic feet per minute (scfm).

SUMMA canister samples of the SVE system influent were obtained on October 10 and December 10. The results are provided in Table 2 below.

**TABLE 2**  
**Summa Canister Sampling**  
**Detected Parameters**

Compound	October 10, 2003		December 10, 2003	
	Concentration (ppmv)	Concentration (ug/m <sup>3</sup> )	Concentration (ppmv)	Concentration (ug/m <sup>3</sup> )
Tetrachloroethene	0.400	2712	0.140	949.2
Trichloroethene	0.520	2792	0.110	590.7
1,1,1-Trichloroethane	0.930	5078	0.100	546
cis-1,2-Dichloroethene	0.013	51.6	0.012	47.6
Toluene	0.048	181	ND	ND
<b>Totals</b>	<b>1.911</b>	<b>10,815</b>	<b>0.362</b>	<b>2134</b>

ppmv – parts per million by volume

The total soil gas extracted by the SVE system for the quarter was approximately 39.8 million cubic feet. A total of approximately 305 pounds of VOCs have been removed by the SVE system since start-up. Mass removal estimates are based on PID readings and SUMMA canister samples obtained periodically from the SVE influent. The removal rate for the SVE system has remained well below the de minimis allowed quantity of 10 pounds per day throughout this quarter.

### Active or Completed Tasks

The following specific tasks were completed during the reporting period:

- Collected water samples on October 21, November 6, and December 2, 2003 from the treatment system influent and effluent sampling ports;
- Collected water level measurements on several occasions and generated potentiometric surfaces based on these measurements;
- Collected airflow data on a monthly basis;
- Collected the semiannual suite of samples from the monitoring network on November 11-12 (except GSS-MW11), and December 2, 2003 (GSS-MW11);
- Continued to operate the AI system on a 12 hour on/12 hour off cycle until the PLC was reprogrammed to operate on a 3 hour on/3 hour off cycle;
- EW-2 wellhead was modified to increase flow and to enable cleaning of the discharge pipe;
- Pumping was shifted to EW-2 only; and
- All wells (on-site and off-site) were resurveyed.

## **II. DELIVERABLES (CURRENT PERIOD AND NEXT PERIOD)**

### **CURRENT PERIOD:**

<u>Deliverable</u>	<u>Due Date</u>	<u>Delivered</u>
Quarterly Report	January 7, 2004	January 7, 2004

### **NEXT PERIOD:**

<u>Deliverable</u>	<u>Due Date</u>
EW-1/EW-2 Capture Report	January 31, 2004
Quarterly Report	April 7, 2004

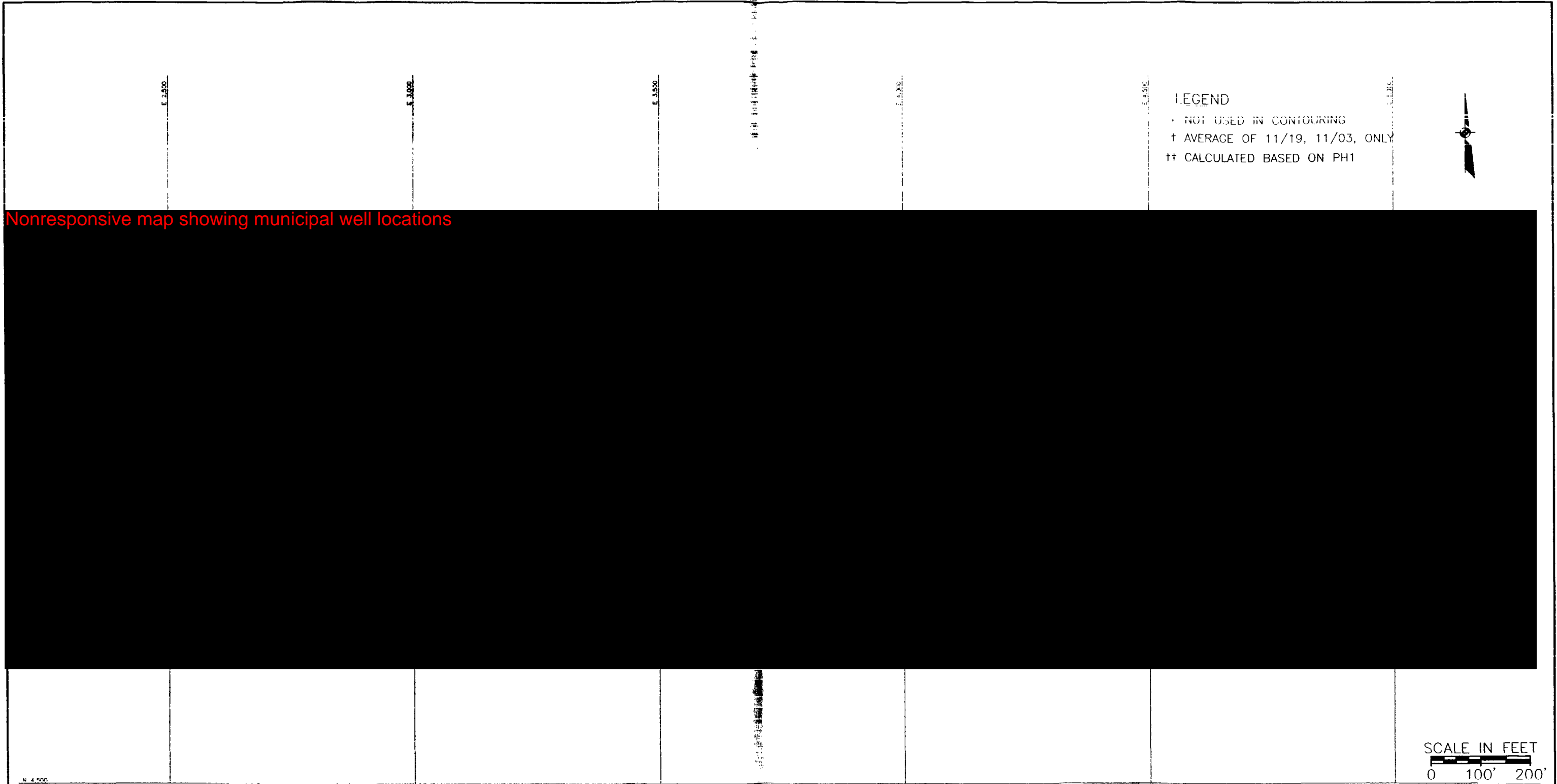
**III. DIFFICULTIES ENCOUNTERED DURING REMEDIAL ACTIONS TAKEN THIS PERIOD**

- None

**IV. ANTICIPATED ACTIVITIES DURING NEXT REPORTING PERIOD**

During the next reporting period, M&E will perform the following tasks:

- Collect potentiometric surface data on a quarterly basis;
- Collect the quarterly suite of samples from the groundwater monitoring network in February;
- Sample the treatment system influent and effluent water on a monthly basis, and analyze the samples for VOCs only;
- Perform scheduled maintenance of the treatment systems;
- Perform scheduled data collection for the treatment systems;
- Acid wash the Shallow Tray™ air stripper; and
- Collect a SUMMA canister sample of the SVE effluent.



Nonresponsive map showing municipal well locations

LEGEND

- NOT USED IN CONTOURING
- + AVERAGE OF 11/19, 11/03, ONLY
- ++ CALCULATED BASED ON PH1



SCALE IN FEET  
0 100' 200'

**M&E** Metcalf & Eddy

GRANVILLE SOLVENTS SITE  
POTENTIOMETRIC SURFACE  
FOURTH QUARTER, 2003  
GRANVILLE, OHIO

FILE NAME	CHECKED	DRAWN	DATE	PROJECT NO.	FIGURE
3RDQUAR03	JP	JAW	—	016688	1